Quiz Tomorrow!

- Waves → Combinations
- Standing Waves → strings, pipes
- Sound → intensity

$$V = f\lambda$$

$$T = \frac{1}{f}$$

$$\lambda_n = \frac{2L}{n} \quad n = 1, 2, 3, \ldots$$

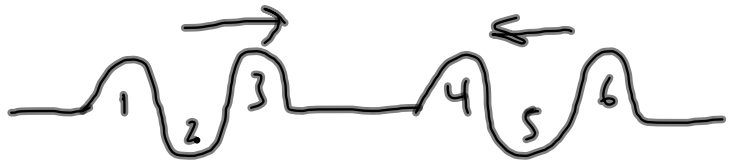
$$\lambda_n = \frac{4L}{n} \quad n = 1, 3, 5, \ldots$$

$$f_n = \frac{nv}{2L} \quad n = 1, 2, 3, \ldots$$

$$f_n = \frac{nv}{4L} \quad n = 1, 3, 5, \ldots$$

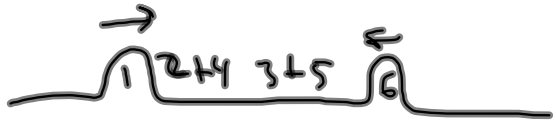
$$I = \frac{P}{4\pi r^2}$$

1)

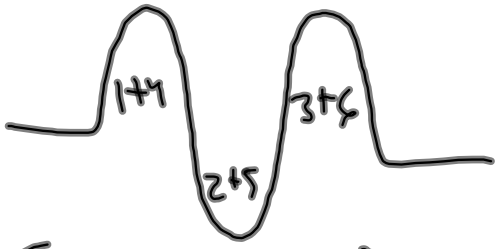


2)

3)

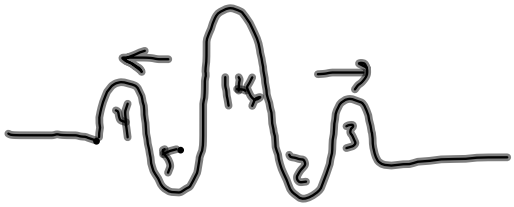


4)

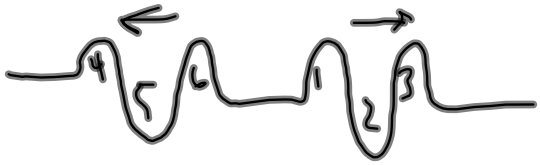


5)

6)



7)



- find frequency of open/open pipe if it is the 5th harmonic of a pipe of length = 10 m. Speed of sound in air = 343 m/s.

- find the wavelength.

$$f_5 = \frac{5v}{2L} = 85.7 \text{ Hz}$$

$$\lambda_5 = \frac{2L}{5} = 4 \text{ m}$$

- Repeat calc. for open/closed pipe

$$f_5 = \frac{5v}{4L} = 42.75 \text{ Hz}$$

$$\lambda_5 = \frac{4L}{5} = 8 \text{ m}$$